



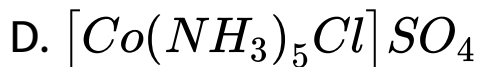
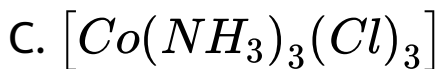
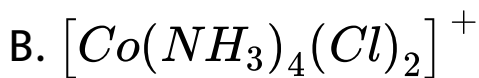
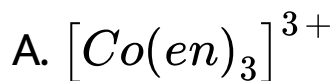
# CHEMISTRY

## BOOKS - FULL MARKS CHEMISTRY (TAMIL ENGLISH)

### SAMPLE PAPER - 15 (UNSOLVED )

#### Part I

1. Fac-mer isomerism is shown by



**Answer: C**



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2. What is the coordination number of  $B_2O_3$ ?

A. 4

B. 6

C. 8

D. 3

**Answer: D**



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**3.** Consider the following statements.

(i) Rate of the reaction does not depend on the initial concentration of the reactants.

(ii) Rate constant of the reaction depends on

the initial concentration of reactants.

(iii) Rate constant of the reaction is equal to the rate of the reaction, when the concentration of each of the reactants is unity.

Which of the above statement(s) is/are not correct?

A. (i) only

B. (ii) only

C. (i) and (ii)

D. (iii) only

**Answer: D**



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4.  $MY$  and  $NY_3$ , are insoluble salts and have the same  $K_{sp}$  value of  $6.2 \times 10^{-13}$  at room temperature. Which statement would be true with regard to  $MY$  and  $NY_3$  ?

A. The salts  $MY$  and  $NY_3$  are more soluble in 0.5 M  $KY$  than in pure water

B. The addition of the salt of  $KY$  to the suspension of  $MY$  and  $NY_3$  will have no

effect on their solubility's

C. The molar solubilities of  $MY$  and  $NY_3$  in water are identical

D. The molar solubility of  $MY$  and water is less than that of  $NY_3$

**Answer: D**



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## 5. Match the following.

- |                            |                |
|----------------------------|----------------|
| (i) Li - ion battery       | (a) Pacemakers |
| (ii) Mercury button cell   | (b) Fuel cell  |
| (iii) Lead storage battery | (c) Cell phone |
| (iv) $H_2 - O_2$ cell      | (d) Inverter   |

A. 

<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>
<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>

B. 

<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>
<i>d</i>	<i>c</i>	<i>b</i>	<i>a</i>

C. 

<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>
<i>b</i>	<i>d</i>	<i>a</i>	<i>c</i>

D. 

<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>
<i>c</i>	<i>a</i>	<i>d</i>	<i>b</i>

**Answer:**



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6. Statement : To stop bleeding from an injury, ferric chloride can be applied. Which comment about the statement is justified?

A. It is not true ferric chloride is a poison.

B. It is true,  $Fe^{3+}$  ions coagulate blood which is a negatively charged sol

C. It is not true, ferric chloride is ionic and gets into the blood stream.



D. It is true, coagulation takes place because of formation of negatively charged sol with  $Cl^-$ .

**Answer: B**



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7. Which one of the following is the correct order of relative reactivities of alcohols in the dehydration reaction?

A.  $1^\circ < 2^\circ < 3^\circ$

B.  $2^\circ < 1^\circ < 3^\circ$

C.  $3^\circ < 2^\circ < 1^\circ$

D.  $3^\circ < 1^\circ < 2^\circ$

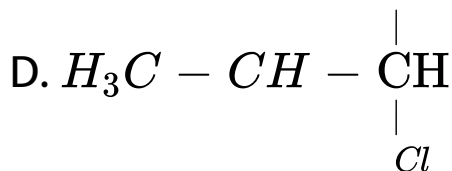
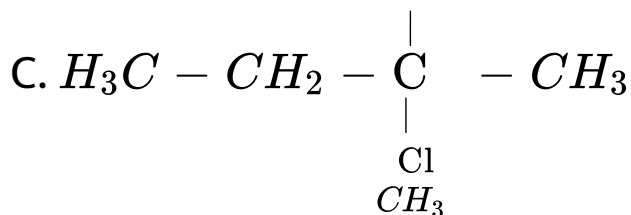
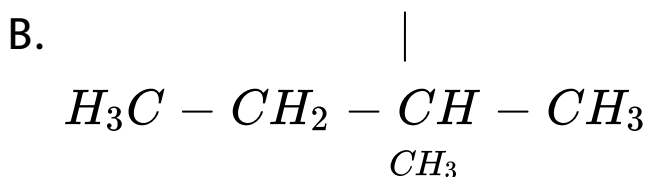
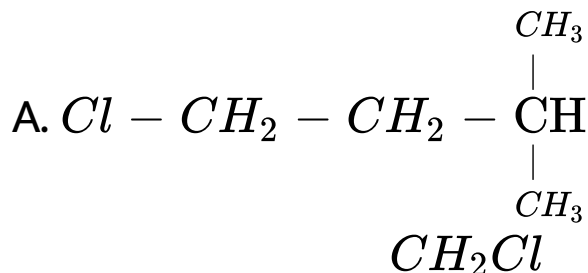
**Answer: A**



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8. An alkene "A" on reaction with  $O_3$  and  $Zn - H_2O$  gives propanone and ethanal in equimolar ratio. Addition of HCl to alkene "A"

gives "B" as the major product. The structure of product "B" is .....

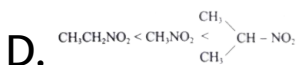
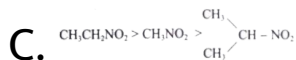
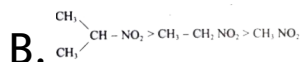
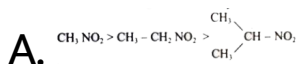


**Answer: C**



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9. The correct decreasing order of acidity of nitro alkane is .....



**Answer: A**



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10. What is the name of the process of synthesis of mRNA from DNA strand?

- A. Tranpiration
- B. Transcription
- C. Transformation
- D. Trans esterification

**Answer: B**



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11. Linear polymer of phenol formaldehyde is called .....

A. novolac

B. bakelite

C. terylene

D. orlon

**Answer: A**



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1.  $ZnO$  can be reduced to the metal by heating with carbon but not  $Cr_2O_3$ . Justify your answer.



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2. Chalcogens belongs to p-block. Give reason.



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3. The type of isomerism exhibited by  $[Pt(NH_3)Cl_2]$  ?



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4. What is the formula of a compound in which the element Y forms a ccp lattice and atoms of X occupy  $\frac{2}{3}$  of tetrahedral voids ?



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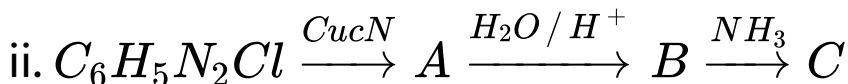
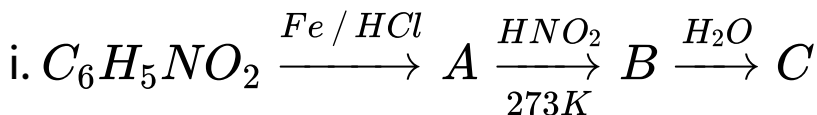
5. Define average rate and instantaneous rate.





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6. Identify compound A, B and C in the following sequence of reactions.



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7.  $LiAlH_4$  is a best reagent to prepare unsaturated alcohol. Prove it.



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8. Why does conductivity of a solution decrease on dilution of the solution?



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9. Give two differences between Hormones and vitamins



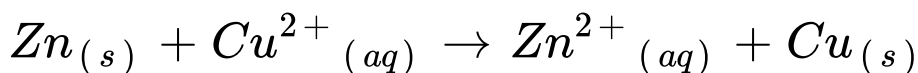
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1. Mention the properties of silicones.



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2. The electrochemical cell reaction of the Daniel cell is



What is the change in the cell voltage on increasing the ion concentration in the anode compartment by a factor 10?



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3. Describe some feature of catalysis by Zeolites .



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4. Mention one use of each of the following :  
(i) Ranitidine (ii) Paracetamol (iii) Tincture of iodine.



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## Part IV

1. (i) Write the molecular formula and structural formula for the following molecules.

(a) Nitric acid (b) dinitrogen pentoxide (c )  
phosphoric acid (d) phosphine

(ii) How will you manufacture sulphuric acid by contact process?



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2. (a) (i) Compare the reduction potentials of



(ii) Prove that acidified potassium dichromate is a powerful oxidising agent.



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3. (i) Calculate the number of atoms per unit cell of bcc type.

(ii) Write short note on metal excess and metal deficiency defect with an example.





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4. (a) (i) From the following data, show that the decomposition of hydrogen peroxide is a reaction of the first order :

t (min)	0	10	20
V (ml)	46.1	29.1	19.3

Where t is the time in minutes and V is the volume of standard  $KMnO_4$  solution required for titrating the same volume of the reaction mixture.

(ii) Define molecularity of a reaction.



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5. (a) (i) Explain why is ortho nitrophenol more acidic than ortho methoxyphenol?

(ii) Describe Lucas test used to distinguish Primary, Secondary and Tertiary alcohols.



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6. (b) A aromatic hydrocarbon (A) of molecular formula  $C_6H_6$  reacts with Conc.  $HNO_3$  and Conc.  $H_2SO_4$  gives (B) of formula  $C_6H_5O_2N$ .

(B) on reaction with  $Sn/HCl$  gives (C) of



formula  $C_6H_7N$  which answers carbylamine reaction. (C ) on treatment with chloroform and alkali gives (D ) of formula  $C_7H_5N$ . Identify A, B, C, D and explain the reactions involved.



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